

# Social Networking Individual vs. Crowd Behavior (Connected Intelligence)

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**Abstract**— The study of Human behavior is much more complicated in various situations, especially on the spectrum of Social Networks. The study of individual behavior cannot be replicated for a group/crowd behavior which can have many social and behavioral dimensions. In the connected world where intelligence is shared among individuals and groups, there exists another kind of complexity which needs to be examined. The complexity of human behaviors as an individual or as a group on the social networks is much more versatile and erratic. The research work studies and analyzes these behaviors in a connected networked intelligent environment and as to how these behaviors are reflected towards Connected Intelligence. Consequently it defines how they can affect the intelligent analytical outcomes. Finally it comes up with a generic model which can be applied in any setup.

**Keywords**— Knowledge management, connected Intelligence, individual Behavior, crowd behavior, social networks.

## I. INTRODUCTION/BACKGROUND

The study of Human behavior is much more complicated in various situations, especially on the spectrum of Social Networks. The study of individual behavior cannot be replicated for a group/crowd behavior which can have many social and behavioral dimensions. If we look at the birds, when they fly in a group formation, they follow a certain specific synchronized behavior pattern. Human beings are not that easy to predict in a social environment. Let's first have a look at the individual and crowd behavior's and does their comparative analysis.

### - Individual Behavior

The way an individual addresses a situations is influenced by many factors. Some of the key factors which influence an individual's attitude can be summarized as;

- Abilities
- Gender
- Race and culture

- Attribution
- Perception
- Attitude

Abilities are the traits a person learns from the environment around as well as the traits a person is gifted with by birth. These traits can be intellectual abilities, physical abilities or self-awareness abilities. Similarly behavioral changes also tend to be different for different genders. Race & Culture are two entities in which the race involves a group of people sharing similar physical features. Culture on the other hand is defined as the traits, ideas, customs and traditions one follows. Both race and culture have great influence in the society. This is followed by perception which is an intellectual process of interpreting something that we see or hear in our mind and use it later to judge or give a verdict. And finally we have attitude is the learnt reaction of a person over a time span. All the above factors contribute to the way we behave. We generally never go into the details about these factors but they are responsible for whatever we do in life. Similarly when these individuals are put into organizations where they have to work in crowded environment's as a team, various others factors come into play which include personal factors, age, gender, religion, marital Status, experience, intelligence, ability, perception, attitude and values.

### - Crowd Behavior

Crowd behavior is the behavior that is conducted by individuals in a gathering of people who share a purpose. They have shown that behavior in crowds is far more mindful, rational and socially organized. Crowd psychology, also known as mob psychology, is a branch of social psychology. Social psychologists have developed several theories for explaining the ways in which the psychology of a crowd differs from and interacts with that of the individuals within it.

Many theories have been propounded by various psychologists and sociologists to explain why the crowd behaves in a particular way. Some of them are;

- Le Bon's Theory[1]
- McDougall's Theory[2]
- Freud's Theory[3]
- Allport's Theory[4]
- Turner's Theory[5]

Crowd or collective behavior is the kinds of activities engaged in by sizable but loosely organized groups of people. Crowd behavior is guided by unique social norms, which are established by members of the crowd. In short, it is a combination of like-minded individuals, anonymity, and shared emotion that leads to crowd behavior.

We have looked at the individual and the crowd behavior separately. However the insight that individuals in a crowd generate behavior as opposed to the group is the core of modern theories. It takes special dimension when we encounter the social networks and how they depict an individual's behavior in a connected environment of connected crowd behavior. With the availability of social network data, it has become possible to relate the behavior of individuals to that of their acquaintances on a large scale.

### Social Media

Over the years the social media has brought about a revolution in the lives of individuals and groups/crowds in the way they conduct their lives.

Within a few years social media has become an integral part of the world. Especially young people cannot think of communication without thinking of online-networks like Facebook, Google+, and Twitter. If we simply look at the Facebook, the largest and the most active social media application, the statistics are mind blowing. As of the third quarter of 2016, Facebook had 1.79 billion monthly active users. 823M of those are mobile-only users. There are 1.083 billion daily active users out of which 47% of Facebook users only access the platform through mobile. 83% of parents on Facebook are friends with their children. Facebook adds 500,000 new users every day; 6 new profiles every second. Worldwide, 38.6% of the online population use Facebook. The average (mean) number of friends is 338, and the median (midpoint) number of friends is 200. Users spend an average of 20 minutes per day on the site with 4 million likes every minute More than 250 billion photos have been uploaded to Facebook which equates to 350 million photos per day [6].

These are just some of the statistics. It is now important for us to study the impact of social media on individuals and groups. Social networks have removed all the communication and interaction barriers, and now one can communicate his/her perception and thoughts over a variety of topics. Crowds are able to share and communicate with like-minded people and can ask for the input and opinion on a particular topic. Instead of individual thinking, now we are moving towards a knowledge core which is the result of social media and the connected intelligence achieved through the interconnection of networks. One of the impact of social networking sites is that it has united people on a huge platform for the achievement of some specific objective. This is very important to bring the change in a society. As humans tend to bow to peer pressure in real life and as well in social media, social media influences their ability to think independently. People seem to be more open to peer pressure within social networks.

Having said that, the long term effects of the social media revolution are not known yet neither on the society as a whole nor on the individuals. Therefore, a thorough reflection is indispensable. Since the effect of social media is subtle and develops over time.

One of the major component of social media's development is certainly the connected intelligence. All the communication takes place on the digital interconnected networks, thus possessing in its millions of servers the connected intelligence needed to visualize the crowd and individual behaviors.

### Connected Intelligence

Connected Intelligence deals with the consequences of massive global networking and what it can lead to when it reaches a critical mass of "connected intelligence." Will the sum total of people's connected intelligence will be more intelligent than any one person's intelligence, is one question which stirs our mind. This leads to the possibility that we are undergoing one of the greatest insights into the evolution of our species. Connected intelligence may be the next step in the evolution of human intelligence. The evolution of connected intelligence is presented below;

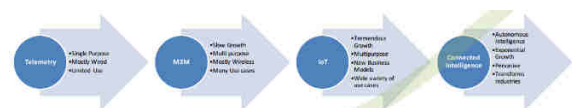


Fig.1: Evolution of Connected Intelligence

MIT acknowledged the importance of connected intelligence in October 2006, when it launched the Center

for Collective Intelligence lead by “Future of Work” [7] author Tom Malone. Its goal was to understand how to harness the power of large numbers of people connected together through Internet and other technologies to better solve a range of business, scientific, and societal problems. The burning question which is explored here concerns how to integrate individual and collective concerns in user centered environments. More importantly, what are personalization and recommendation mechanisms that exist for collectives, individuals and crowds in communities? This eventually leads to virtual communities that share and acquire individual and collective knowledge. Through connected intelligence, data scientists extract relevant information from social channels and integrate it with additional data to get insight into individual and crowd behavior patterns. This allows them to go beyond social media listening; giving people the full context and a strong foundation on which to base knowledge driven paradigms.

## II. RESEARCH METHODOLOGY

Our research methodology is descriptive in nature. Once gone through the Individual and crowd behavior, we need to develop a model which will integrate the two into connected intelligence thus giving an output for the knowledge management tool.

### Model Development

Having looked at various dimensions of the human behaviors, now we are in a position to design a sustainable Model.

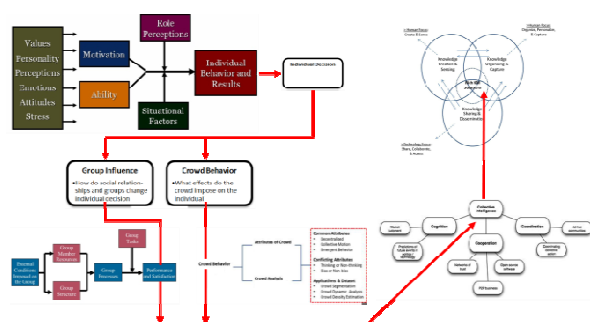


Fig.2: Designed Model

The designed model has the following five segments/components.

- Individual Behavior
- Crowd Behavior
- Group Influence/Behavior
- Collective Intelligence
- Knowledge Management

The Individual model comprises of the following inputs;

- Values
- Personality
- Emotions
- Attitudes
- Stress

These create the respective motivation and ability. The role perceptions and the situational factors play an important role in developing the individual behavior and the outcome in the form of results.

Similarly the group influence and the crowd behavior impact the collective intelligence which comprises of coordination and cognition. When all combined, it leads to the strong knowledge management/sharing mechanisms. Let's have a look at the individual components of the designed model.

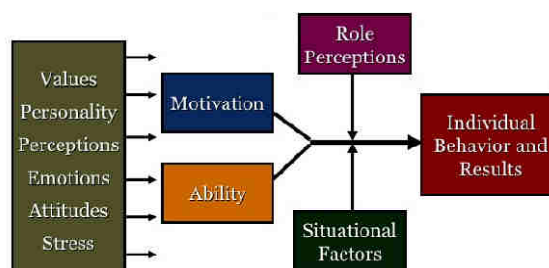


Fig.3: Individual Behavior Model

The individual behavior model of individual behavior is a model that seeks to elaborate individual behavior as a result of internal and external factors or influences combined together. It consists of the following attributes of individuality;

- Motivation
- Abilities
- Role Perception
- Situational Factors.

This model puts forward the concept that these four factors have a mixed effect on individual behavior. If any factor weakens, behavior will be affected.

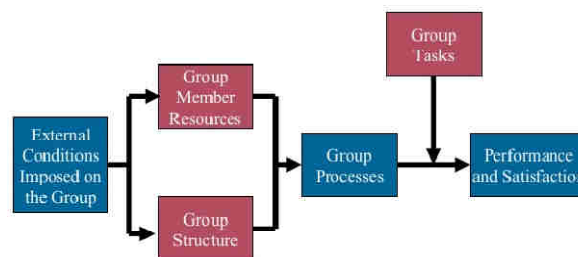


Fig.4: Group Influence/Behavior Model

Here we see the external conditions imposed on the group. The group is affected by the overall strategy, authority structures, formal regulations, resources, performance management system and the organizational culture. Group member resources pertain to task- relevant and intellectual abilities of individual members. In the group structure the structural variables include roles, norms, status and the size of the group. Group process is centered towards communications, decision making, leadership and conflict. Group tasks include standardized complex and simple tasks.



Fig.5: Connected Intelligence Model

Collective intelligence model depicts is shared or group intelligence that emerges from the collaboration, collective efforts, and competition of many individuals and appears in consensus decision making.

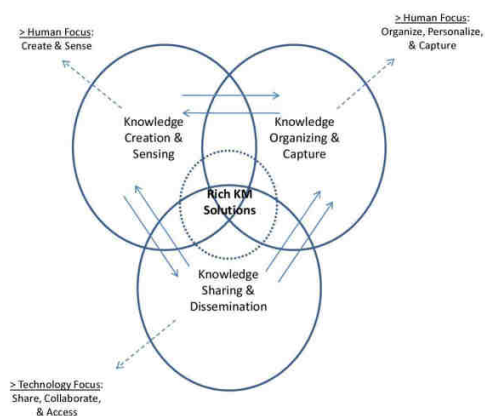


Fig.6: Knowledge Management

This Knowledge Management Model attempts offers a more an overview of the knowledge management process. The following three broad categories overlap and interact with one another.

- Knowledge creation and Sensing
- Knowledge sharing and dissemination
- Knowledge organizing and capture

It also shows that which of the three categories are more people oriented; and which are more, technology focused. The last fundamental design model is the integration of the models shown from Fig-3 to Fig-6, this coming up with an integrated approach as shown in the designed model (Fig-2).

### III. CONCLUSION

The study of Human behavior, Social Networks and Connected Intelligence has shown a lot of bonding in relation to the individual and crowd behaviors. This area of research has been neglected for a long time. In our connected world intelligence is shared among individuals and groups which brings in a lot of complexities which needs to be addressed. More importantly there is a need to come up with a modelling approach so as to implement it in a social media setting where connected networks provide connected intelligence which becomes an input to the knowledge management.

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